AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer-implemented method for <u>efficiently sharing data in an information handling system including a plurality of heterogeneous processors,</u> ~~solving linear equations,~~ the method comprising:

receiving, into a common memory, a plurality of coefficients,

the common memory being accessible by one or more first processors and by one or more secondary processors, wherein the one or more first processors and the one or more ~~second~~ <u>secondary</u> processors being chosen from ~~a group~~ <u>the plurality</u> of heterogeneous processors, and

the coefficients corresponding to ~~the~~ <u>a set of</u> linear equations;

dividing the coefficients into a plurality of coefficient blocks<u>, stored in the common memory,</u> using the one or more first processors;

identifying an available <u>secondary</u> processor from the secondary processors for processing ~~one of the~~ <u>a selected</u> coefficient ~~blocks~~ <u>block</u>;

<u>transferring, by the available secondary processor, the selected coefficient block from the common memory to a local memory using a direct memory access operation, wherein the local memory is accessible to the available secondary processor;</u>

processing the <u>selected</u> coefficient block using the available secondary processor, the processing resulting in a sub-result; and

storing<u>, by the available secondary processor,</u> the sub-result in the common memory<u>, wherein the sub-result is stored by the available secondary processor using a direct memory access operation, and wherein the stored sub-result is accessible by the first processors and the secondary processors by reading the sub-result from the common memory</u>.

2. (Original) The method of Claim 1, further comprising determining a set of matrix operations for solving the linear equations.

3. (Currently Amended) The method of Claim 2, wherein the processing comprises applying to the <u>selected coefficient</u> ~~coefficients~~ block a portion of the set of matrix operations corresponding to the <u>selected coefficient</u> ~~coefficients~~ block.

4. (Currently Amended) The method of Claim 1, ~~further comprising~~ <u>wherein the transferring further comprises</u> the available secondary processor directly accessing the common memory using a memory access unit ~~and transferring the coefficients block from the common memory to a second memory local to the available second processor~~.

5. (Currently Amended) The method of Claim 1, wherein the dividing comprises dividing the coefficients into a plurality of coefficient blocks, a size of the ~~coefficients~~ <u>coefficient</u> blocks equaling a size of registers of the available secondary processor.

6. (Currently Amended) The method of Claim 1, further comprising sending a request to the available secondary processor to begin processing the <u>selected</u> coefficient block, the request comprising processing instructions and the location of the <u>selected</u> coefficient block.

7. (Currently Amended) The method of Claim 1, further comprising the available secondary processor notifying one of the first processors after processing the <u>selected coefficient</u> ~~coefficients~~ block.

8. (Original) The method of Claim 1, further comprising processing the data block further using one of the first processors.

9. (Original) An information handling system comprising:

a plurality of heterogeneous processors, wherein the plurality of heterogeneous processors includes one or more first processors and one or more secondary processors; and

a common memory accessible by the plurality of heterogeneous processors, wherein:

one of the first processors is adapted to receive, into the common memory, a plurality of coefficients, the coefficients corresponding to the linear equations,

one of the first processors is adapted to divide the coefficients into a plurality of coefficient blocks,

one of the first processors is adapted to identify an available processor from the secondary processors for processing one of the coefficient blocks,

the available secondary processor is adapted to process the coefficient block, the processing resulting in a sub-result, and

the available secondary processor is adapted to store the sub-result in the common memory.

10. (Original) The information handling system of Claim 9, wherein one of the first processors is further adapted to determine a set of matrix operations for solving the linear equations.

11. (Currently Amended) The information handling system of Claim 10, wherein the available second secondary processor is further adapted to apply to the coefficients block a portion of the set of matrix operations corresponding to the coefficients block.

12. (Currently Amended) The information handling system of Claim 9, wherein the available ~~second~~ secondary processor is further adapted to directly access the common memory using a memory access unit and to transfer the coefficients block from the common memory to a second memory local to the available ~~second~~ secondary processor.

13. (Original) The information handling system of Claim 9, wherein one of the first processors is further adapted to divide the coefficients into a plurality of coefficient blocks, a size of the coefficients blocks equaling a size of registers of the available secondary processor.

14. (Original) The information handling system of Claim 9, wherein one of the first processors is further adapted to send a request to the available secondary processor to begin processing the coefficient block, the request comprising processing instructions and the location of the coefficient block.

15. (Currently Amended) The information handling system of Claim 9, wherein the available ~~second~~ secondary processor is further adapted to notify one of the first processors after processing the coefficients block.

16. (Original) The information handling system of Claim 9, wherein one of the first processors is further adapted to process the data block further.

17. (Currently Amended) A computer program product stored on computer ~~operable~~ readable media, ~~the computer program product comprising:~~ the computer readable media containing instructions for execution by a computer, which, when executed by the computer, cause the computer to implement a method for efficiently sharing data between a plurality of heterogeneous processors in the computer, the method comprising:

~~means for~~ receiving, into a common memory, a plurality of coefficients,

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the common memory being accessible by one or more first processors and by one or more secondary processors, wherein the one or more first processors and the one or more ~~second~~ secondary processors are ~~included in a~~ chosen from the group of heterogeneous processors, and

the coefficients corresponding to a set of linear equations;

~~means for~~ dividing the coefficients into a plurality of coefficient blocks, stored in the common memory, using the one or more first processors;

~~means for~~ identifying an available secondary processor from the secondary processors for processing ~~one of the~~ a selected coefficient ~~blocks~~ block;

transferring, by the available secondary processor, the selected coefficient block from the common memory to a local memory using a direct memory access operation, wherein the local memory is accessible to the available secondary processor;

~~means for~~ processing the selected coefficient block using the available secondary processor, the processing resulting in a sub-result; and

~~means for~~ storing, by the available secondary processor, the sub-result in the common memory, wherein the stored sub-result is stored by the available secondary processor using a direct memory access operation, and wherein the stored sub-result is accessible by the first processors and the secondary processors by reading the sub-result from the common memory.

18. (Currently Amended) The computer program product of Claim 17, ~~further comprising means for~~ wherein the method further comprises determining a set of matrix operations for solving the linear equations.

19. (Currently Amended) The computer program product of Claim 18, wherein the ~~means for~~ processing comprises applying to the <u>selected coefficient</u> ~~coefficients~~ block a portion of the set of matrix operations corresponding to the <u>selected coefficient</u> ~~coefficients~~ block.

20. (Currently Amended) The computer program product of Claim 17, wherein the ~~means for~~ dividing comprises ~~means for~~ dividing the coefficients into a plurality of coefficient blocks, a size of the ~~coefficients~~ <u>coefficient</u> blocks equaling a size of registers of the available secondary processor.